DOCUMENT RESUME

ED 075 519 UD 013 417

AUTHOR	Taylor, Myrtice M.; And Others
TITLE	Fred A. Toomer Elementary School. Research and Development Report, Volume 6, Number 6.
INSTITUTION	Atlanta Public Schools, Ga.
PUB DATE	Oct 72
NOTE	39p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Career Opportunities; *Compensatory Education Programs; Educational Opportunities; Elementary Education; *Elementary Schools; Elementary School Teachers; Employment Programs; *Inner City; Inservice Teacher Education; Longitudinal Studies; Paraprofessional School Personnel; *Program Evaluation
IDENTIFIERS	*Elementary Secondary Education Act Title I; ESEA Title I; Georgia

ABSTRACT

The Comprehensive Instructional Program is a locally conceived and funded project designed to improve instruction in all areas in the elementary grades throughout the school system, through diagnostic teaching and inservice training for teachers. The services of the Title I, Elementary Secondary Education Act project were utilized to meet the needs of the most educationally deprived pupils in the school. These services included those of a lead teacher, a part-time--20 per cent of a week--social worker, and three educational aides. Under the Emergency Employment Act of 1971, one educational aide was assigned for this school. This person performed similar duties to those of the Title I educational aides. The Career Opportunities Program (COP) is a training program designed to provide educational opportunities for capable persons from low-income communities who perhaps otherwise would not have pursued careers in education. Two of the Title I educational aides assigned to this school are COP participants, and therefore are pursuing a planned program of study leading toward professional certification. The Project Success Environment program at this school was a pilot program which was initiated to test the effectiveness of the success technique as it might be applied in any inner-city elementary school. (Author/JM)

ED 075519

RESEARCH AND DEVELOPMENT REPORT

Vol. VI, No. 6 October, 1972

FRED A. TOOMER ELEMENTARY SCHOOL

1971-72

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UD 013417

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I. RATIONALE

According to the 1971, ESEA, Title I Survey of Deprivation, fifty-nine per cent of the 420 pupils enrolled in F. A. Toomer Elementary School were from families whose annual incomes were less than $3,000. Many of the problems associated with low-income communities were prevalent in this school.

The mobility index for 1971-72 was twenty-four per cent, which indicates that nearly one-fourth of the school population either moved into or out of the school community. Even though this was a high rate of mobility, it was a slight decrease from the 1970-71 index of twenty-eight per cent.

As is true of many pupils from low-income communities, many of the pupils at Toomer do not perform up to the standards set by pupils from average or more affluent environments. The findings reported in the 1971 Research and Development Report, Volume V, Number 22, showed that the ending reading levels of pupils in grades 2—5 ranged from a deficit of 1.1 years in the second grade to 2.2 years in the fifth grade, according to the Metropolitan Achievement Tests (MAT) posttest data. The lead teacher and classroom teachers, upon examination of pupil reading records, at the beginning of the 1971-72 term, found that more than two-thirds of the pupils were reading below grade placement. Consequently, it was decided that concerted efforts would be made to bridge the gap through a more intensive program of individualized instruction. Special emphases were placed on the instructional needs of those pupils who were identified as low-achievers. Therefore, a careful study was made of their performance as well as the longitudinal performance of the pupils in grades three and five.

The second and fourth grades were excluded from the longitudinal aspect of the study because the achievement test data for these grades were not comparable to the achievement test data of the other grades

(three and five). Gain for the pupils when they were in the first grade cannot be adequately computed in that the pretest (the Metropolitan Readiness Tests [MRT]) yields a letter score and the posttest (the Metropolitan Achievement Tests [MAT]) yields a grade equivalent score. The fourth grade took the MAT only as a posttest. No data for grades six and seven were included because the enrollment of Toomer included only grades K — 5. The sixth and seventh grades attended Coan Middle School.

Supporting Projects

Comprehensive Instructional Program (CIP)

CIP is a locally conceived and funded project designed to improve instruction in all areas in the elementary grades throughout the school system through diagnostic teaching and inservice training for teachers. During the first year of implementation (1970-71), emphases were placed on diagnostic teaching procedures in reading in grades 1 — 3 and inservice training for teachers of reading. This year (1971-72), the project was extended to stress teaching procedures in reading in grades 1 — 4 and concentrated on mathematics achievement in grades five and six. Specifically in Toomer, however, the project still concentrated only on stressing teaching procedures in reading in grades 1 — 3.

The CIP coordinator from the area office assisted the local school personnel in effectively implementing and strengthening the established reading program through:

1. Assisting teachers in selecting appropriate materials and utilizing new and old materials.

2. Demonstrating teaching techniques.

3. Encouraging teachers to provide learning experiences for each child wherein some success and accomplishment might be realized.

4. Encouraging teachers to provide for pupil experiences which foster decision-making, self-directiveness, and independence.

5. Assisting teachers in providing for continuous assessment of pupil performance and growth through the effective use of CIP test results.

Further, funds were provided for specific reading and math materials.

ESEA Title I

The services the Title I project were utilized to meet the needs of the most educationally deprived pupils in the school. These services included those of a lead teacher, a part-time (20 per cent of a week) social worker, and three educational aides.

1. The services of the lead teacher encompassed planning and organizing, coordinating, and evaluating the total instructional program with emphasis on improving the educational opportunities of low-achieving pupils.

2. The educational aides assisted teachers with preparing instructional materials, supervised pupils working on special activities, and worked with pupils in the reading centers, individually and in small groups.

3. The services of the social worker were shared among a group of schools in Area V, the local area. One day (20 per cent of a week) a week was spent in Toomer working with pupils who had attendance problems. The social worker supervised the Junior Girl Scouts group one hour a week.

4. The Youth-Tutoring-Youth (Y-T-Y) activity extended and reinforced the regular school program, particularly in the language arts. The tutees who were low achieving elementary pupils were tutored after school by low achieving pupils from Coan Middle School. A Title I aide supervised the activity.

5. Volunteer parents provided assistance to the school program by supervising pupils at lunch, in the classroom, on school trips, during scout meetings, and in the learning centers.

In an effort to involve parents in the school program, a survey was made during the 1970-71 school year to determine parents who were interested in and available for volunteer services. This list was updated this year with additional volunteers or replacements for those who were not able to serve.

Emergency Employment Act, 1971 (EEA)

The purposes of this Act were as follows:

1. To provide employment for unemployed persons.

2. To provide employment for underemployed persons.

3. To provide valuable services while achieving goals 1 and 2.

Under this Act one educational aide was assigned to this school. This person performed similar duties as those described for the Title I educational aides.

Career Opportunities Program (COP)

COP is a training program designed to provide educational opportunities for capable persons from low-income communities who perhaps otherwise would not have pursued careers in education. The concept of COP is that these persons, with proper training, can improve educational opportunities of children from low-income communities while training for careers of useful service. Two of the Title I educational aides assigned to this school are COP participants, and are, therefore, pursuing a planned program of study leading toward professional certification. These two participants have been in COP for two years.

Project Success Environment

The program at this school was a pilot program which was initiated to test the effectiveness of the success technique as it might be applied in any inner-city elementary school. The success technique employed positive reinforcement to establish and maintain order in

the classroom and to promote academic achievement. Basically, the Toomer "proliferation model" was designed to establish the success approach to classroom management at minimum cost and with minimum staff support. The existing staff was trained and utilized.

II. NEEDS OF THE PUPILS

The following were identified as characteristic of the needs of the pupils.

1. To experience success in performing assigned tasks, particularly in reading.

2. To receive encouragement and immediate reinforcement for efforts.

3. To develop a positive attitude toward school.

4. To develop self-direction and skill in performing independent tasks.

5. To learn their expected level of performance and their individual capabilities and limitations.

III. GOALS OF THE PROGRAM

The following goals were based on the foregoing identified needs.

1. To provide guidance and sufficient opportunities for each child to develop and demonstrate self-confidence needed to attack learning tasks successfully.

2. To provide learning experiences designed to meet individual needs, thus allowing each child to develop skill in performing independent tasks and to assume responsibility for his own learning.

3. To provide learning experiences through which pupils will develop specific reading skills needed to make satisfactory progress at individual rates.

4. To provide immediate reinforcement for pupils so that they will develop a more positive attitude toward school.

Behavioral Objectives

The learning experiences of the program were geared toward the realization of the following objectives, which are listed under the specific project to which they relate.

Comprehensive Instructional Program (CIP)

1. The same percentage of first graders who score "C" or above on the Metropolitan Readiness Tests (MRT) will score 1.6 or above in reading on the Metropolitan Achievement Tests (MAT).

2. Pupils in grades 1—3 will achieve an average of one month gain in reading for each month of instruction.

Career Opportunities Program (COP)

1. Pupils in grades 1—3 taught by COP teams will make a gain of more than one grade level annually in reading.

2. Pupils taught by COP teams will make significantly greater gains in reading than will pupils taught in self-contained classrooms.

3. Pupils taught by COP teams will achieve significantly greater gains in pupil self-concepts annually than will pupils who were not taught by COP teams.

4. The low-income schools with COP teams will achieve, after one year of operation, more open climates than will non-COP schools.

Project Success Environment

The specific objectives of this project are written in process form and the specific behaviors are listed under each objective.

1. Objective 1. TO TRAIN THE EXISTING FACULTY OF AN ELEMENTARY SCHOOL TO USE THE SUCCESS TECHNIQUE BY MEANS OF AN INSERVICE PROGRAM UTILIZING PROJECT SUCCESS ENVIRONMENT TEACHERS AS TRAINERS.

a. Hypothesis 1. After a teacher-to-teacher training program and approximately four weeks experience with the success technique, the incidences of positive reinforcement dispensed by the elementary school teachers will be significantly greater ($p < .05$) than the incidences of positive reinforcement dispensed prior to training and experience.

b. Hypothesis 2. After a teacher-to-teacher training program and approximately four weeks experience with the success technique, the incidences of punishment dispensed by the elementary school teachers will be significantly lower ($p < .05$) than the incidences of punishment dispensed prior to training and experience. (If incidences of punishment approach zero during the observation periods, the positive reinforcement data alone will be considered.)

2. Objective 2. TO ASSESS THE EFFECTIVENESS OF A MODEL FOR REPLICATING THE SUCCESS TECHNIQUE AT MINIMAL COST IN CONJUNCTION WITH EXISTING CURRICULUM.

a. Hypothesis 1. After approximately four weeks exposure to the success technique, the pupils will display significantly less ($p < .05$) disruptive behavior in the classroom compared with their behavior prior to the introduction of the success technique.

b. Hypothesis 2. After approximately four weeks exposure to the success technique, the pupils will display significantly more ($p < .05$) on-task involvement as compared with their on-task involvement prior to the introduction of the success technique.

c. Hypothesis 3. The pupils will display significantly greater gains ($p < .05$) from pretest to posttest on a test of academic material taught in conjunction with the success technique as compared with gains from pretest to posttest on a test of comparable academic material taught without the success technique.

Variables to be Measured

1. Academic achievement in reading.
2. Self-concept.
3. Attitude toward school.
4. Openness of school climate.
5. Effectiveness of the success technique at minimal cost in conjunction with existing curriculum.

IV. MANAGEMENT AND CONTROL

The Superintendent of the Atlanta Public Schools is appointed by the Board of Education and is authorized by the Board to administratively direct the instructional program of the school system. There are five area superintendents who, under the guidance of the Superintendent, are administratively responsible for all school programs. The area superintendent of each geographical area supervised the principals of the schools within that area. Also, within the organizational structure of the local school system, there were six assistant superintendents who directed the six divisions of supportive services to the instructional program. Among these divisions were: (1) Research and Development, (2) Instruction, (3) Personnel, and (4) Administrative Services. The functions of these divisions had direct impact on the instructional opportunities provided for pupils.

The Assistant Superintendent for Research and Development and his staff were responsible for developing new programs, evaluating the effectiveness of program activities, and disseminating information.

The Assiscant Superintendent of Staff Personnel Services and her staff assumed the responsibility of meeting the staffing needs of the instructional programs within the schools and project activities.

Inservice training for teachers, staff development, and curriculum development were directed by the Assistant Superintendent for Instruction and his staff. Within this division, the directors and coordinators of federal, state, and local projects and various curriculum areas worked with the staffs of the other divisions, the area superintendents, the principals, and the teachers to implement programs and provide for the training needs of the school personnel.

The area superintendent and his staff were administratively responsible for the school in the geographic area. His staff supervised and worked directly with the local school staff in implementing the instructional program of the school.

At the local school level, the principal was responsible for administrative aspects of the school program. Among the administrative responsibilities of the principal were assignment of teachers to classes, conferring with parents, involving the community, and supervision of instructional and staff development activities, including faculty meetings.

The lead teacher worked under the direction of the principal to coordinate the instructional activities, particularly as they related to meeting the needs of the educationally deprived. The lead teacher assisted teachers in finding innovative methods of providing individually for pupils, in selecting materials and supplies, and in growing professionally. Further, the lead teacher coordinated the activities of the educational aides with those of the classroom teachers with whom the aides worked directly and indirectly.

The faculty was exposed to the success technique operant conditioning in a three-hour meeting. Most of the faculty's training in the success technique was accomplished under the guidance of the Wesley and Whitefoord project teachers by means of demonstrations and visitations to the project classrooms. Input was also realized from project teachers at Coan Middle School.

V. PROCESS

Reading was taught for a two-hour period each morning using the Macmillan Basal Reader Series. During this period the pupils were divided into groups according to reading levels and social maturity. These groups met simultaneously, with no one teacher having more than two levels for instruction at any one time. The first grade pupils were taught in self-contained classes for the most part. The second and third grade pupils returned to their regular grade level groupings following the two-hour reading period. The fourth and fifth grade pupils remained in the ability groupings for all disciplines.

From October through December, 1971, during the reading period, one-half of the pupils was sent to the various learning centers to be assisted by the aides, the librarian, and the lead teacher, while the teachers instructed the other one-half of the pupils. In the learning centers, pupils were further grouped according to reading levels so that specific attention could be given to individual differences.

Beginning in January, 1972, Project Success Environment (PSE) was initiated in the school and the procedures for the learning centers was changed. The total instructional period for reading remained two hours. However, one-third of the pupils was funneled into the learning centers for thirty-minute periods while the classroom teacher worked with two-thirds of the pupils for one hour at a time.

With the inception of PSE, the success technique which employed positive reinforcement to establish and maintain order in the classrooms of all grades and to promote academic achievement was used all day in all disciplines.

The success technique was implemented in conjunction with the existing curriculum. During the initial stages, the faculty dispensed some tangible rewards, such as candy, trinkets, and toys, contingent upon the social behavior and academic performances of the pupils. Most of the rewards were intangible. These ranged from praise and attention to special privileges. The pupils were able to earn time to visit an activity room where they had access to such fun items as games, puzzles, dolls, jacks, and model cars.

Fifty-four pupils who were identified as low-achievers in reading were selected for the Title I compensatory tutorial program. These pupils were identified on the basis of their performance on the 1971-72 Metropolitan Achievement Tests (MAT), in the basal reader, on the Comprehensive Instructional Program (CIP) tests, and according to teacher judgments. These pupils received special attention in the centers and for four weeks they received intensive tutoring by the educational aides and the lead teacher. Specific activities and materials included the following:

Matching and checking (pictures with letters and words)
Following instructions
Completing sentences
Choosing best answers from multiple-choice alternatives
Making and using learning games
Hearing rhyming words.

The following equipment and materials were also used:

Macmillan Tutorial System
Dolch Games
Dolch Word List
Sound Way to Easy Reading
Lyons Carnahan -- Phonics We Use
Dolch Crossword Puzzles
Teacher-made materials
Pictures That Teach
Listening stations.

VI. EVALUATION

Research Design

The general design used to study the program was one which determined the beginning and ending points of the pupils and denoted changes which occurred. The following procedures were followed to obtain data necessary for evaluative purposes.

1. Data collected by administering the Self-Appraisal Inventory (SAI) and the School Sentiment Index (SSI) to a sample of pupils in grades 1—3 were used as baseline data on self-concept in the longitudinal study.

2. Data collected by the Metropolitan Achievement Tests (MAT) through the City-wide Testing Program were utilized to assess academic gains in reading and mathematics. The reading gains of pupils who were identified as educationally deprived and who received intensified individualized instruction were compared to the reading gains of other pupils in those grades. Average grade gains in reading in each grade were compared to the average grade gains in reading for the 1970-71 school year. Specific analysis was made of extreme performance.

3. The Organizational Climate Index (OCI) was administered to a randomly selected sample of teachers and the data compared to the 1970-71 results.

4. Incidences of positive reinforcement and punishment in the classroom were recorded during a two-week period prior to the introduction of the success technique and during a two-week period after the success technique had been operative approximately four weeks.[1]

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[1] William R. Brassell and Gail Russell, Success Environment: End-of-Budget Period Report. Atlanta, Georgia: Atlanta Public Schools Publication Center, FY 1972, Volume 1, Appendix D.

5. Incidences of disruptive behavior in the classroom were recorded during a two-week period prior to the introduction of the success technique and during a two-week period after the success technique had been operative for approximately two weeks.[2]

6. Incidences of on-task involvement in the classroom were recorded during a two-week period prior to the introduction of the success technique and during a two-week period after the success technique had been operative for approximately two weeks.[3]

7. Kindergarten pupils were administered a letter recognition test on a pretest-posttest basis for letters of the alphabet taught during a two-week period without the use of the success technique. They were then administered a letter recognition test on a pretest-posttest basis for comparable material taught during a two-week period in conjunction with the success technique. Pupils in the other grades were tested on the same basis, with pupils in grades one and two taught and tested for word recognition and pupils in grades 3—5 taught and tested for word knowledge. The presentation of the academic materials was counterbalanced. Midway through the instructional procedures the pupils were transferred from one class to another in order to balance the number of pupils in each class. This rearrangement of pupils interfered with the counterbalanced design and invalidated the data which were subsequently collected.[4]

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[2] Ibid.

[3] Ibid.

[4] Ibid.

Findings

Academic Achievement in Reading

The data showing the performance of first grade pupils on the Metropolitan Readiness Tests (MRT) and the reading subtest of the Metropolitan Achievement Tests (MAT) are presented in Table 1. According to these data, thirty-five pupils scored "C" or above and eleven scored "D" on the MRT. Of the thirty-five pupils whose scores indicated readiness for first grade work, only fifty-one per cent scored 1.6 or above on the MAT.

TABLE 1

SUMMARY OF PUPIL PERFORMANCE ON THE METROPOLITAN READINESS TESTS AND THE METROPOLITAN ACHIEVEMENT TESTS READING SCORES — FIRST GRADE

N = 46

Group	Number (S_3 Population)	MAT SCORES			
		1.6 or Above		1.0 — 1.5	
		No.	Per Cent	No.	Per Cent
Scored "C" or above on MRT	35	18	51.0	17	49.0
Scored "D" on MRT	11	-0-	——	11	100.0
TOTAL	46	18	39.0	28	61.0

The distribution of scores on both tests is presented in Table 2, page 15. The data revealed that all pupils who scored "A" or "B" on the MRT scored as was expected (1.6 or above) on the MAT, while only about one-third of the pupils who scored "C" on the MRT scored 1.6 or above on the MAT. These findings seemingly indicated that the instructional program did not meet the specific needs of the "C" range group.

TABLE 2

DISTRIBUTION OF LETTER RATING AND READINESS STATUS CORRESPONDING TO VARIOUS RANGES OF TOTAL SCORE ON THE METROPOLITAN READINESS TESTS AND THE METROPOLITAN ACHIEVEMENT TESTS READING SCORES — FIRST GRADE 1971-72 — N = 46

No.	Score Range	Letter Rating	Readiness Status	Significance	Posttest Above 1.6	Posttest Below 1.6
4	Above 76	A	Superior	Apparently very well prepared for first grade work. Should be given opportunity for enriched work in line with abilities.	4	-0-
6	64 — 75	B	High Normal	Good prospects for success in first grade work provided other indications such as health, emotional factors, etc., are consistent.	6	-0-
25	45 — 63	C	Average	Likely to succeed in first grade work. Careful study should be made of the specific strengths and weaknesses of pupils in this group and their instruction planned accordingly.	8	17
11	24 —44	D	Low Normal	Likely to have difficulty in first grade work. Should be assigned to slow section and given more individualized help.	-0-	11
-0-	Below 24	E	Low	Chances of difficulty high under ordinary instructional conditions. Further readiness work, assignment to slow sections, or individualized work is essential.	-0-	-0-

Presented in Table 3, page 16, are data concerning grades, two, three, and five. The fourth grade took the MAT only as a posttest and was, therefore, excluded from this report. These data show the number of pupils who took both pretest and posttest (S_3 population), the mean reading pretest and posttest scores, mean reading gain, per cent of expected gain obtained, gain score *t* test, per cent of attendance, and coefficient of correlation between reading gains and attendance.

According to these data none of the grades realized the objective (six months between pretest and posttest). However, the gains in the second and third grades were statistically significant at the .001 level. The gain made by the fifth grade was not statistically significant.

Further, concerning these data, correlation was computed between the S_3 group gain reading score and attendance. There was no significant correlation between these two variables. Therefore, it is assumed that attendance did not influence the performance of any of the S_3 groups in reading.

TABLE 3

COMPARISON OF THE METROPOLITAN ACHIEVEMENT TESTS MEAN READING SCORES, GAIN, PER CENT OF EXPECTED GAIN, GAIN SCORE t-TEST, PER CENT OF ATTENDANCE, AND COEFFICIENT OF CORRELATION BETWEEN ATTENDANCE AND READING FOR GRADES 2, 3, AND 5

(S_3 POPULATION)

Grade	Number of Pupils	Mean Score Pre	Mean Score Post	Gain	Per Cent of Expected Gain	t Test	Per Cent of Attendance	r
2	33	1.45	1.86	0.41	67.0	6.06***	95.0	0.16
3	49	2.11	2.51	0.40	65.0	4.82***	97.2	0.23
5	46	3.56	3.70	0.14	22.0	1.36	97.0	0.11

*** Significant at the .001 level.

A longitudinal profile of the reading performance of pupils in the grades for which these data were available is presented in Table 4, page 17.

TABLE 4

LONGITUDINAL PROFILE OF THE READING PERFORMANCE OF PUPILS WHO TOOK BOTH THE PRETEST AND THE POSTTEST IN 1970-71 AND IN 1971-72

GRADES 1 — 5

	1970-71				1971-72			
Number	Grade	Pre	Post	Gain	Grade	Pre	Post	Gain
23	1	C	1.5	----	2	1.5	1.8	0.3
41	2	1.6	1.9	0.3	3	2.1	2.5	0.4
34	4	2.7	3.3	0.6	5	3.5	3.6	0.1

The reading scores for pupils who took both the pretest and the posttest during a two-year period (1970-71 and 1971-72) are shown. In that the first grade pupils took the MRT as a pretest and the MAT as a posttest, no gain score was given for the first grade; however, according to these data, considering "C" as being ready for first grade work, the posttest showed an estimated gain of five months. In the second grade, these same pupils gained only three months.

The third grade pupils performed slightly better (one month) in the third grade than they did in the second grade. The fourth grade took the MAT only as a posttest so no score was shown for the fourth grade.

The fifth grade pupils showed a reading gain which was much less than their reading gain in the fourth grade. This decrease prompts the question as to whether the contributing factors were in the instructional program, the testing procedures, or were they pupil related?

The low-achieving pupils who were identified for the Title I compensatory program were selected after the MAT posttest was administered. Consequently, the effects of the four weeks of tutorial work were not reflected in the gain scores.

There were approximately twenty pupils involved as tutees in the Youth-Tutoring-Youth (Y-T-Y) Activity in Toomer. Matched scores were available for only eight of these pupils (three second graders and five third graders). These were pupils who were identified, according to MAT data and teacher observation, as possessing very limited basic reading skills and needing additional help beyond the regular classroom experiences.

Using an analysis of covariance, a comparison was made between the performance of the tutored and non-tutored pupils on each of the MAT subtests related to reading performance (word knowledge, word analysis, reading, and reading total). The pretest scores were used as the covariant. According to the F-test, there was no statistically significant difference between the two groups on any of the subtests. In that the beginning difference between the two groups was adjusted by analysis of covariance, and the two groups made similar gains, these data seemingly indicated that tutoring did not affect the performance of the tutees. These data are presented in Table 5 (second grade), page 19, and Table 6 (third grade), page 20.

Members of the Division of Research and Development conducted a study of the effectiveness and acceptability of the reading program in 1970-71, and the reading and arithmetic programs in 1971-72, in each elementary school. These findings were presented in a separate document entitled, "Effective? Acceptable?" Summary data concerning Toomer were taken from that report and are presented in Table 7 (Reading Program) and Table 8 (Arithmetic Program), page 21.

TABLE 5

COMPARISON OF MEAN READING SUBTESTS SCORES (PRE AND POST) ON THE METROPOLITAN ACHIEVEMENT TESTS FOR SECOND GRADE TUTORED AND NON-TUTORED PUPILS

	Treatment	Error	Total
Word Knowledge			
Sum of Squares: X (Pretest)	0.02	6.43	6.45
Sum of Squares: Y (Gain)	0.17	12.12	12.29
Sum of Products	0.05	4.67	4.72
Degrees of Freedom	1.00	33.00	34.00
Adjusted Sum of Squares: Y	0.10	8.73	8.83
Degrees of Freedom for Adjusted Sum of Squares	1.00	32.00	33.00
Variance Estimates	0.10	0.27	
F = 0.3644			
Adjusted Mean of Y_1* = 0.3171	Adjusted Mean of Y_2** = 0.5078		
Word Analysis			
Sum of Squares: X (Pretest)	0.09	5.61	5.70
Sum of Squares: Y (Gain)	0.00	1.78	1.78
Sum of Products	0.02	1.32	1.33
Degrees of Freedom	1.00	33.00	34.00
Adjusted Sum of Squares: Y	0.00	1.47	1.47
Degrees of Freedom for Adjusted Sum of Squares	1.00	32.00	33.00
Variance Estimates	0.10	0.27	
F = 0.0070			
Adjusted Mean of Y_1* = 0.2727	Adjusted Mean of Y_2** = 0.2619		
Reading			
Sum of Squares: X (Pretest)	0.01	8.26	8.28
Sum of Squares: Y (Gain)	0.11	10.23	10.34
Sum of Products	0.04	2.48	2.52
Degrees of Freedom	1.00	33.00	34.00
Adjusted Sum of Squares: Y	0.09	9.49	9.58
Degrees of Freedom for Adjusted Sum of Squares	1.00	32.00	33.00
Variance Estimates	0.09	0.30	
F = 0.3056			
Adjusted Mean of Y_1* = 0.2194	Adjusted Mean of Y_2** = 0.4013		
Reading Total			
Sum of Squares: X (Pretest)	0.03	6.58	6.60
Sum of Squares: Y (Gain)	0.09	5.37	5.46
Sum of Products	0.05	2.93	2.98
Degrees of Freedom	1.00	33.00	34.00
Adjusted Sum of Squares: Y	0.05	4.07	4.11
Degrees of Freedom for Adjusted Sum of Squares	1.00	32.00	33.00
Variance Estimates	0.05	0.13	
F = 0.3661			
Adjusted Mean of Y_1* = 0.2750	Adjusted Mean of Y_2** = 0.4055		

*Y_1 = Tutored **Y_2 = Non-tutored

TABLE 6

COMPARISON OF MEAN READING SUBTESTS SCORES (PRE AND POST) ON THE METROPOLITAN ACHIEVEMENT TESTS FOR THIRD GRADE TUTORED AND NON-TUTORED PUPILS

	Treatment	Error	Total
Word Knowledge			
Sum of Squares: X (Pretest)	0.03	33.67	33.70
Sum of Squares: Y (Gain)	1.20	65.01	66.21
Sum of Products	0.20	22.28	22.48
Degrees of Freedom	1.00	50.00	51.00
Adjusted Sum of Squares: Y	0.94	50.26	51.21
Degrees of Freedom for Adjusted Sum of Squares	1.00	49.00	50.00
Variance Estimates	0.94	1.03	
F = 0.9204			
Adjusted Mean of Y_1* = 0.4924	Adjusted Mean of Y_2** = 0.9497		
Word Analysis			
Sum of Squares: X (Pretest)	0.21	30.26	30.46
Sum of Squares: Y (Gain)	0.01	20.08	20.09
Sum of Products	0.03	7.45	7.49
Degrees of Freedom	1.00	50.00	51.00
Adjusted Sum of Squares: Y	0.00	18.24	18.25
Degrees of Freedom for Adjusted Sum of Squares	1.00	49.00	50.00
Variance Estimates	0.00	0.37	
F = 0.0044			
Adjusted Mean of Y_1* = 0.7076	Adjusted Mean of Y_2** = 0.6886		
Reading			
Sum of Squares: X (Pretest)	0.00	30.44	30.44
Sum of Squares: Y (Gain)	0.00	16.85	16.85
Sum of Products	0.00	-2.84	-2.84
Degrees of Freedom	1.00	50.00	51.00
Adjusted Sum of Squares: Y	0.00	16.58	16.58
Degrees of Freedom for Adjusted Sum of Squares	1.00	49.00	50.00
Variance Estimates	0.00	0.34	
F = 0.0000			
Adjusted Mean of Y_1* = 0.3794	Adjusted Mean of Y_2** = 0.3788		
Reading Total			
Sum of Squares: X (Pretest)	0.01	26.46	26.47
Sum of Squares: Y (Gain)	0.01	10.99	11.01
Sum of Products	0.01	6.42	6.43
Degrees of Freedom	1.00	50.00	51.00
Adjusted Sum of Squares: Y	0.01	9.43	9.44
Degrees of Freedom for Adjusted Sum of Squares	1.00	49.00	50.00
Variance Estimates	0.01	0.19	
F = 0.0452			
Adjusted Mean of Y_1* = 0.4507	Adjusted Mean of Y_2** = 0.4946		

*Y_1 — Tutored **Y_2 — Non-tutored

TABLE 7

LONGITUDINAL PROFILE OF EFFECTIVENESS AND ACCEPTABILITY
OF THE READING PROGRAM
1970-71 AND 1971-72

Grade	Gain		Gain Rate of Effectiveness		Index of Acceptability	
	Actual	Predicted	1971-72	1970-71	1971-72	1970-71
2	0.3	0.4	75	50	63	63
3	0.3	0.2	150	120	65	68
4	0.7	0.7	100	80	64	64
5	0.2	0.5	40	120	60	63
		AVERAGE	91	93	63	65

Note: The interval between pretest and posttest was from April, 1971, to April, 1972, for the fourth grade, and from October, 1971, to April, 1972, for all other grades.

TABLE 8

PROFILE OF EFFECTIVENESS AND ACCEPTABILITY
OF THE ARITHMETIC PROGRAM
1971-72

Grade	Gain		Gain Rate of Effectiveness	Index of Acceptability
	Actual	Predicted		
2	0.3	0.4	75	56
3	0.7	0.4	175	76
4	1.0	1.2	83	70
5	0.1	0.3	33	77

Note: The interval between pretest and posttest was from October, 1971, to April, 1972, for all grades except the fourth; the interval for the fourth grade was from April, 1971, to April, 1972.

These data show the actual and predicted gains, the gain rate of effectiveness, and acceptability over a two-year period in reading and a one-year period in arithmetic. The predictions were made on the basis of six factors; namely, per cent of attendance, stability, per cent of

paid lunches, teacher-pupil ratio, pretest scores on the MAT, and per cent of pupils passing.

The predicted gain for each grade (except the fourth) was less than the expected gain of six months between the pretest and the posttest. This is to say that, based upon the degree to which the influencing factors (previously named) were present within this school, certain gains were predicted which were less than the acceptable gain of one month for one month of instruction. Therefore, the per cent of effectiveness differs from the per cent of expected gain reported in Table 3, page 16. While the data from this study, which considered contributing factors and were median scores, differed from the data in Table 3, which did not consider contributing factors and were mean scores, the results were similar, indicating cause for concern, particularly in the fifth grade.

According to these data, both the reading and the arithmetic programs were most effective in grades three and four. In these grades, the gain rate of effectiveness in 1971-72 showed an increase over 1970-71, while the gain rate of effectiveness showed a definite decrease in the fifth grade. Further, these data showed that definite efforts should be directed toward strengthening the effectiveness of the programs in an effort to raise the level of acceptability, thus moving the pupils closer to national norms. The pupils are now performing at approximately sixty-five per cent of the national norm.

Self-Concept

To assess this variable, the Self-Appraisal Inventory (SAI), developed by the Instructional Objectives Exchange, was administered to a random sample of fifty-nine pupils, twenty first graders, twenty second graders, and nineteen third graders. According to the data, the pupils in each grade had an acceptable level of self-esteem (scored positively more than fifty per cent of the time), associated with peer relations, scholastic endeavors, and their general views of themselves.

All three groups reflected low estimates of self esteem in family interactions. The per cent of positive responses in each of the four aspects of self-concept (peer, family, scholastic, and general), which were measured by this instrument, is presented in Table 9. These data will be used as baseline data in the longitudinal study of the instructional program. The same population will be tested again during the 1972-73 school year; thus some meaningful trend perhaps can be identified.

TABLE 9

PER CENT OF POSITIVE RESPONSES ON THE SELF APPRAISAL INVENTORY

Grade	Number	Subscales			
		Peer	Family	Scholastic	General
1	20	61.0	43.0	73.0	77.0
2	20	58.0	43.0	70.0	72.0
3	19	53.0	42.0	71.0	75.0

Attitude Toward School

The School Sentiment Index (SSI), developed by the Instructional Objectives Exchange, was administered to a random sample of sixty pupils in grades one, two, and three. According to these data, the first and third grade pupils had positive attitudes toward the teachers' behavior, relationships within the peer group, school subjects, the school as a social center, and general orientation to school. While the pupils in the second grade reflected positive attitudes, their scores were much lower than those of the pupils in grades one and three. These data are presented in Table 10, page 24. The longitudinal aspect of the study should reveal any identifiable trend.

TABLE 10

PER CENT OF POSITIVE RESPONSES ON THE
SCHOOL SENTIMENT INDEX

Grade	Number	Teachers	Peer	School Subjects	General	School Climate
1	20	69.0	72.0	81.0	78.0	73.0
2	20	52.0	47.0	53.0	57.0	60.0
3	20	67.0	54.0	80.0	80.0	77.0

Openness of School Climate

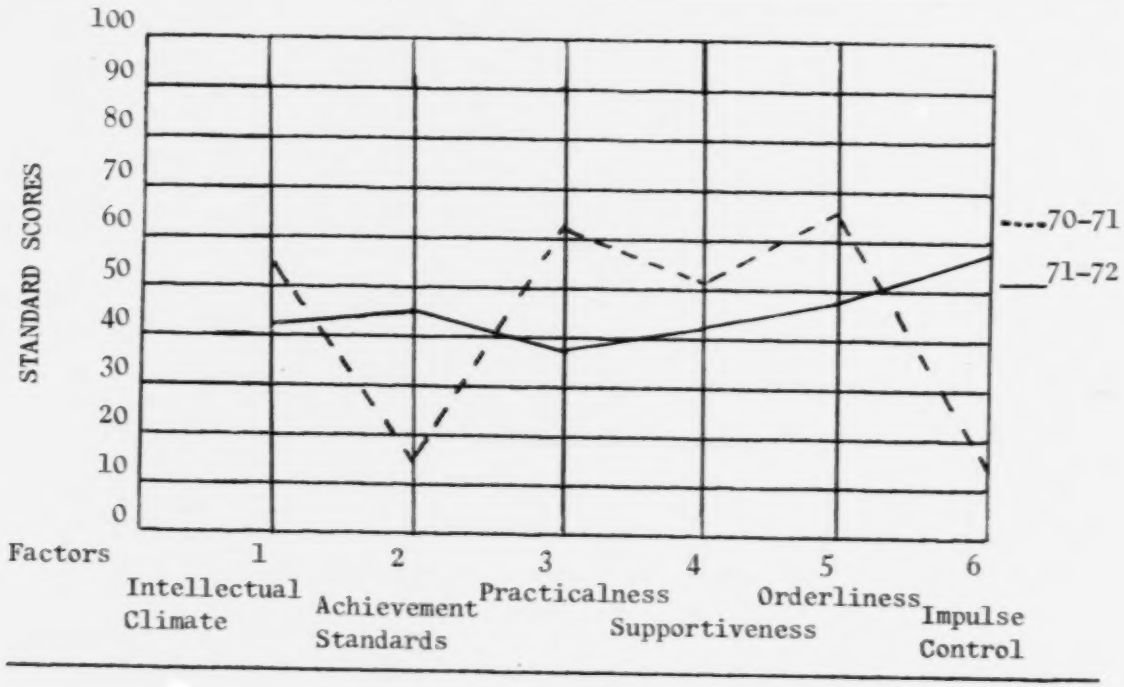
A random sample of teachers was asked to complete, anonymously, the Organizational Climate Index (OCI), developed by George Stern of Syracuse University.

OCI presents the respondent with 300 statements which he is to answer true or false as applicable to his school. After compilation, the items on the OCI provide [illegible] from the respondent on thirty need-press scales postula[illegible]urray and his associates at Harvard University in 1[illegible]urther analysis of these data produces six OCI factors which are called first-order factors. The first five first-order factors describe a second-order factor called "development press" which is the capacity of the organizational environment to support, satisfy, or reward self-actualizing behavior. Another second-order factor, "control press," described by impulse control, refers to those characteristics of the environment which inhibit or restrict personal expressiveness. A copy of Murray's Need-Press Scales and a copy of the six OCI factors with their definitions are presented in the Appendix.

Presented in Table 11, page 25, are data on the organizational climate at Toomer for a two-year period. Before the conversion, a negative lower score on Factor 6 indicated that teachers perceived the

TABLE 11

SCHOOL PROFILE OF STANDARD FACTOR SCORES ON
THE ORGANIZATIONAL CLIMATE INDEX



climate as being more open. Conversion of the raw score on each factor to standard score erased the negative loading of Factor 6. Consequently, the higher the score on each factor (including number 6), the more open the climate.

The 1971-72 mean scores were slightly lower than the 1970-71 mean scores on Factors 1, 3, 4, and 5, and much higher on Factors 2 and 6. Because the scores on four factors were only slightly lower and were much higher on the factors which were extremely low in 1970-71, the over-all climate seemingly was more open in Fy 72 than in Fy 71. In the general OCI study, which included twenty-eight schools, an intercorrelation matrix including the OCI factor scores, reading achievement scores, and per cent of attendance was computed. No significant correlation was found between the degree of openness of climate and achievement.

Effectiveness of the Success Technique at Minimal Cost in Conjunction with Existing Curriculum

The following behaviors were observed in every classroom by the Project Success observers for 45 minutes in the morning each day: (1) teacher reinforcement, (2) teacher punishment, (3) student attention, and (4) student disruption. The frequency of teacher reinforcement and student disruption was divided by the number of students present in the classroom during each observation to make the data comparable across classes. The data were averaged over all fourteen Toomer teachers with one average which was taken for the two weeks prior to training and another which was taken for the two weeks after the technique became operational. The results are summarized in Table 12.

TABLE 12

RESULTS OF SUCCESS TECHNIQUE IN CLASS OBSERVATIONS
AVERAGE OF ALL FOURTEEN CLASSES

Behavioral Measure	Before Success Technique Range	Mean	After Success Technique Range	Mean	F Value
Reinforcements per Pupil (15 minutes)	0.02— 0.54	0.21	0.13— 1.51	0.70	31.87**
Disruptions per Pupil (15 minutes)	0.20— 2.43	1.13	0.00— 2.03	0.56	22.23**
Per Cent Time On-task	37.30—88.90	67.40	63.40—98.70	84.50	52.50**
Total Punishment	0.00—10.00	2.50	0.00— 3.67	0.83	5.86**

**Significant at the .01 level.

These data show definite improvement in both teacher and pupil behaviors in the classroom. Teachers issued more reinforcements and less punishments, and pupils disrupted less frequently and were more attentive after the success technique than before.

The success staff attributed the Before/After mean differences (statistically significant at the .01 level) entirely to the introduction of the success technique. The staff also recognized the great differences that existed among teachers even with the technique as evidenced by the range of frequencies before and after. Further, the staff noted that the means on all four measures taken after the introduction of the success technique were slightly less optimal than the average on those same measures in the full-time project classess. However, they cautioned the reader to consider the fact that the success technique was introduced at Toomer with far less time and expense than it was in the original project classroom and that it had been operational for less than six weeks at the time the data were gathered.[5]

VII. COST ANALYSIS

The data presented in Table 13, page 28, show the relative cost for a one-grade-unit of gain based upon the rate of gain for FY 72 and the amount spent. In order to compute these costs, expenditures were taken from the General Funds Report, June, 1972, and the Trust and Agency Report, June, 1972. From these figures estimates were made of the per pupil cost from general funds and special projects (compensatory funds). These data also show the cost in compensatory funds for each unit of effectiveness — effectiveness as determined in the Effectiveness, Acceptability Study, 1972. The reader is cautioned that these data are not exact or finite; rather, broad estimates were made based upon information obtained from the school staff relative to the utilization of resources.

According to these data, the cost for a one-grade-unit of gain was not related to the amount of funds spent. The per pupil cost in each grade reported (no grade-unit gain was calculated for the kindergarten, first, and fourth grades because of the testing program) was similar.

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[5] Ibid.

TABLE 13

COST ANALYSIS OF READING GAINS BY GRADES
TOTAL AVERAGE DAILY ATTENDANCE (ADA) K—5 = 368

	GRADES				
	Second	Third	Fourth	Fifth	Average
ADA	63	62	78	56	64.8
Per-Pupil Cost					
A. General Funds					
1. Regular					
a. Salary	$ 629.12	$ 629.12	$629.12	$ 629.12	$ 629.12
b. Non-salary	67.13	67.13	67.13	67.13	67.13
c. Total	$ 696.25	$ 696.25	$696.25	$ 696.25	$ 696.25
2. CIP					
a. Salary	$ 0.11	$ 0.11	$ 0.11	$ 0.11	$ 0.11
b. Non-salary	1.80	1.80	1.80	1.80	1.80
c. Total	$ 1.91	$ 1.91	$ 1.91	$ 1.91	$ 1.91
3. Total General Funds					
a. Salary	$ 629.23	$ 629.23	$629.23	$ 629.23	$ 629.23
b. Non-salary	68.93	68.93	68.93	68.93	68.93
c. TOTAL GENERAL FUNDS	$ 698.16	$ 698.16	$698.16	$ 698.16	$ 698.16
B. Compensatory Funds					
1. ESAP					
a. Salary	$ 0.81	$ 0.81	$ 0.81	$ 0.81	$ 0.81
b. Non-salary	1.00	1.00	1.00	1.00	1.00
c. TOTAL ESAP	$ 1.81	$ 1.81	$ 1.81	$ 1.81	$ 1.81
2. EEA-1971					
Salary	$ 5.83	$ 5.83	$ 5.83	$ 5.83	$ 5.83
3. Title I					
a. Salary	$ 75.05	$ 75.05	$ 75.05	$ 75.05	$ 75.05
b. Non-salary	0.41	0.41	0.41	0.41	0.41
c. TOTAL TITLE I	$ 75.46	$ 75.46	$ 75.46	$ 75.46	$ 75.46

TABLE 13 (CONT'D.)

	GRADES				
	Second	Third	Fourth	Fifth	Average
4. EPDA					
Salary	$ 1.04	$ 1.04	$ 1.04	$ 1.04	$ 1.04
5. COP					
Salary	$ 5.18	$ 5.18	$ 5.18	$ 5.18	$ 5.18
6. Total Compensatory Funds					
a. Salary	$ 90.09	$ 90.09	$ 90.09	$ 90.09	$ 90.09
b. Non-salary	1.41	1.41	1.41	1.41	1.41
c. TOTAL COMPENSATORY FUNDS	$ 91.50	$ 91.50	$ 91.50	$ 91.50	$ 91.50
C. Total Per-Pupil Cost					
1. General Funds	$ 698.16	$ 698.16	$698.16	$ 698.16	$ 698.16
2. Compensatory Funds	91.50	91.50	91.50	91.50	91.50
3. TOTAL PER-PUPIL COST	$ 789.66	$ 789.66	$789.66	$ 789.66	$ 789.66
D. Rate of Reading Gain (Per Cent)	66.0	65.0	——	22.0	52.0
E. Projected Cost for One-Grade-Unit of Gain					
1. General Funds	$1,057.82	$1,074.09		$3,173.45	$1,342.62
2. Compensatory Funds	138.64	140.77	——	415.91	175.96
3. TOTAL PROJECTED COST FOR ONE-GRADE-UNIT OF GAIN	$1,196.46	$1,214.86		$3,589.36	$1,518.58
F. Gain Rate of Effectiveness	75.0	150.0	100.0	40.0	91.0
G. Expenditure per ADA of Compensatory Funds for Each Unit of Effectiveness	$1.22	$0.61	$0.92	$2.29	$1.93

Based upon the pupil performance, the cost of a one-grade-unit of gain for the fifth grade was approximately three times greater than the cost in grades two and three.

In relating cost to effectiveness, there were no indications that the amount of compensatory funds spent influenced the effectiveness of the reading program. The cost per unit of effectiveness ranged from a low of $0.61 in the third grade to a high of $2.29 in the fifth grade. These data prompt the question as to what factors contributed to the variations in cost and the effectiveness of the program.

VIII. CONCLUSIONS

Based on the findings concerning pupil progress and the instructional program during FY 72, the following conclusions were drawn:

1. Only the first-grade pupils who scored in the high normal and superior ranges succeeded in the first grade in the manner expected.

2. The average performance of the pupils in grades 2, 3, and 5 was not meeting the requirements of the objectives established by the faculty at the beginning of the year. That is, the pupils in these grades did not gain one month for each month of instruction.

3. There was no statistically significant correlation between pupil attendance and pupil achievement in grades 2, 3, and 5 for those pupils who were enrolled in Toomer during the entire school year.

4. In a longitudinal study of pupil progress which covered FY 71 and FY 72, the achievement gains were not as expected and were particularly low for pupils who were in the fifth grade during FY 72.

5. The Youth-Tutoring-Youth (Y-T-Y) Activity did not statistically affect the achievement of those pupils who were tutored.

6. Only pupils in grades 3 and 4 performed as predicted when the prediction was based on the formula used to determine the gain rate of effectiveness.

7. Pupils in grades 2, 3, 4, and 5, which were the grades included in the study of the level of acceptability, were performing at a level which was approximately two-thirds of the national norm.

8. Pupils had, in general, an acceptable level of self-esteem in peer relationships, scholastic endeavors, and general view of themselves. They had a low level of self-esteem in family interaction.

9. Pupils had a positive attitude toward the behavior of the teachers, relationships with peer groups, school subjects, the school as a center, and general orientaion to school.

10. The over-all organizational climate of the school became more open during FY 72 than it was during FY 71. However, more attention could be given to two areas: relationships concerning intellectual activity, and practicalness.

11. The data obtained during FY 72 did not seem to indicate any significant change in pupil achievement because of the impact of Project Success Environment. They did indicate a lower level of disruption and a higher level of attentiveness to tasks by pupils and a higher level of reinforcement by teachers.

12. The amount of funds spent did not relate significantly to the achievement of pupils.

IX. RECOMMENDATIONS

It is recommended that the faculty analyze the instructional program in order to determine the following:

1. Practices which contributed to the improved situations so that consideration can be given to the feasibility of utilizing such practices in grades where progress lagged.

2. Specific plans to raise the gain rate of effectiveness in all grades, particularly in the grades where the rate of effectiveness was low.

3. Specific plans to utilize services provided through compensatory funds so that maximum results will be obtained from these services.

4. Specific plans to concentrate preventive and remedial services in a manner which would alleviate the most critical situations rather than attempting to spread the services over a larger number of pupils which seems to have resulted in weakening the effects of compensatory services.

The faculty is to be commeded for its concern, efforts, and diligence in pursuing the accomplishments of the objectives set forth. Further, the faculty is encouraged to continue to seek out approaches which will raise the level of effectiveness to a degree which ultimately also will raise the level of acceptability.

APPENDIX

MURRAY'S NEED-PRESS SCALES

1. Abasement-assurance: self-deprecation versus self-confidence
2. Achievement: striving for success through personal effort
3. Adaptability-defensiveness: acceptance of criticism versus resistance to suggestion
4. Affiliation-rejection: friendliness versus unfriendliness
5. Aggression-blame avoidance: hostility versus disorganization

6. Change-sameness: flexibility versus routine
7. Conjunctivity-disjunctivity: planfulness versus organization
8. Counteraction-inferiority avoidance: restriving after failure versus withdrawal
9. Deference-restiveness: respect for authority versus rebelliouness
10. Dominance-tolerance: ascendance versus forbearance

11. Ego Achievement: striving for power through social action
12. Emotionality-placidity: expressiveness versus restraint
13. Energy-passivity: effort versus inertia
14. Exhibitionism-inferiority avoidance: attention-seeking versus shyness
15. Fantasied achievement: daydreams of extraordinary public recognition

16. Harm avoidance—risk-taking: fearfulness versus thrill seeking
17. Humanities-social sciences: interests in the humanities and the social sciences
18. Impulsiveness-deliberation: impetuosity versus reflection
19. Narcissism: vanity
20. Nuturance-rejection: helping others versus indifference

21. Objectivity-projectivity: detachment versus superstition (AI) or suspicion (EI)
22. Order-disorder: compulsive organization of details versus carelessness
23. Play-work: pleasure-seeking versus purposefulness
24. Practicalness-impracticalness: interest in practical activities versus indifference
25. Reflectiveness: introspective contemplation

26. Science: interest in the natural sciences
27. Sensuality-puritanism: interest in sensory and aesthetic experiences
28. Sexuality-prudishness: heterosexual interests versus inhibitions of heterosexual interests
29. Supplication-autonomy: dependency versus self-reliance
30. Understanding: intellectuality

ORGANIZATIONAL CLIMATE INDEX FACTORS

A. Development Press

1. Intellectual climate — This factor describes a concern with intellectual activity, social action, and personal effectiveness. It is based on the scales for humanities, social science, science, reflectiveness, understanding, fantasied achievement, exhibitionism, and change. A school that scores high on this factor is one in which there is a high degree of intellectuality, heterosexual interests, flexibility, and attention seeking.

2. Achievement standards — This is the factor reflecting press for achievement. Schools high on this factor stress hard work, perseverance, and a total day-by-day commitment to institutional purposes. It is defined by counteraction, energy, achievement, emotionality, and ego achievement.

3. Practicalness — This factor suggests an environmental dimension of practicality tempered with friendliness. It is defined by practicalness and nurturance. A school that scores high on this factor is one in which the teachers feel there is a high interest in practical activity and a desire for helping others.

4. Supportiveness — This factor deals with aspects of the organizational environment that respect the integrity of the teacher as a person, but the implication is that dependency needs must be supported rather than personal autonomy emphasized. It might be considered a measure of democratic paternalism. The scales defining it are assurance, tolerance, objectivity, affiliation, conjunctivity, supplication, blame avoidance, harm avoidance, and nurturance. A school that scores high on this factor is one in which the teachers feel a high degree of self-confidence, friendliness, and planfulness.

5. Orderliness — The components of this factor are concerned with the press for organizational structure, procedure, orderliness, and a respect for authority. Conformity to community pressures and an effort to maintain a proper institutional image probably are also concomitants of a high score on this factor. It is based on order, narcissism, adaptability, conjunctivity, deference, and harm avoidance.

A school that scores high on this factor is one in which the teachers feel there is a compulsive organization of details, acceptance of criticism, respect for authority, vanity, and planfulness.

B. Control Press

In addition to the reflection of factors (1) and (2) under Development Press, Control Press involves:

Impulse control — This factor implies a high level of constraint and organizational restrictiveness. There is little opportunity for personal expression or for any form of impulsive behavior. It is based on work instead of play; prudishness versus sexuality; aggression versus blame avoidance; impulsiveness versus deliberation; emotionality versus placidity; and exhibitionism versus inferiority avoidance. A school that scores high on this factor is one in which the teachers feel there is a high degree of purposefulness, heterosexual interests, hostility, impetuosity, expressiveness, and restriving after failure.